

Patent Abstracts of Japan

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APPLICANT : UBE IND LTD;

INVENTOR : YAMAGUCHI MASAHIKO;

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TITLE : PRODUCTION OF POROUS HOLLOW FIBER MEMBRANE

ABSTRACT : PURPOSE: To produce a porous hollow fiber membrane preferably usable as a gas exchange membrane for an artificial lung preventing a leak of serum even after use for a long time and a gas separation membrane for oxygen enrichment.

CONSTITUTION: Undrawn hollow fibers made of thermoplastic resin are spun, the outer surfaces of the fibers are partially melted and cooled and then the fibers are drawn. Dense layers are formed in the outer surfaces and a porous hollow fiber membrane having a double-layered structure composed of porous and dense layers is produced.

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(C) WPI/Derwent

AN - 1992-362454 [44]

A - [001] 014 03- 04- 041 046 050 30& 357 369 387 428 43& 447 481 50& 51&
540 56& 57& 575 58& 595 596 623 624 643 645 688

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KS - 0216 0229 0231 0248 2368 2371 2413 2471 2653 2654 2765 2768 3226 3245
3255 3256 3270

MC - A11-B02 A11-B02A A12-S05A A12-S05U A12-W11A E11-Q01 E31-D01 J01-C03
J01-D02 J01-E03E

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PA - (UBEI) UBE IND LTD

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AB - J04265133 A raw thermoplastic porous hollow fibre membrane is heated,
cooled, then stretched, so that the outer surface of the membrane is
partially fused and dense skin layer free of pores or with smaller
pores is developed.

- USE/ADVANTAGE - Used to produce hollow fibre membranes for gas sepn.
They are used for artificial lungs or O2 enrichment. The skin layer
has no pores or smaller pores, so that blood plasma is hardly
penetrated out of the membrane when it is used as artificial lungs.

- In an example, 'UBE-PP-F109' (RTN, polypropylene, Ube Kosan Corp) was
spun into a porous hollow fibre with 230 microns inside dia. 350
micron outside dia. The hollow fibre was heated in the air at 185
deg.C for 30 sec. cooled, then stretched at 135 deg.C by 300% at a
rate of 8.33 % min. further heated at 150 deg.C for 2 min. A dense
skin layer free of pores was developed. (Dwg.0/0)

CN - R01779-P

DRL - 9240-7

IW - PRODUCE POROUS HOLLOW FIBRE MEMBRANE DENSE OUTER SKIN
COMPRISE HEAT

COOLING STRETCH THERMOPLASTIC FIBRE MEMBRANE FUSE OUTER
SURFACE REMOVE
PORE

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PORE

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PAW - (UBEI) UBE IND LTD

**TI - Prodn. of porous hollow fibre membrane with dense outer skin -
comprises heating, cooling and stretching thermoplastic fibre membrane
to partially fuse outer surface and remove pores**